

*National Association of
Broadcasters, Inc.*

THE ABC OF RADIO

SO THAT THE AVERAGE
LISTENER MAY UNDERSTAND
HOW IT WORKS IN AMERICA





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THE A B C *Of Radio*

WHEN the first man desired to communicate with another, the need for radio began.

It is as old as that, and as new as the next tick of the clock!

To most, radio remains a mystery, to be turned on and off as we like.

We turn the dial and listen if we are pleased; we switch it off if we are not pleased. Beyond this we ask no questions.

But what lies beyond the radio set in our living room?

From what strange land of nowhere come the voices of presidents and kings; the sound of music and laughter?

Unreal, but real—

Unseen, but heard.

What is this mystery of radio?

Though some twenty-seven million American families own and use thirty-three million radio sets every day, few indeed have explored the fascinating story of radio beyond the schedule of the next program.

For that matter, few indeed have ever looked under the hood of their automobile and inspected the engine. It is enough for Americans that service be rendered, and well.

But radio broadcasting in its brief seventeen years has grown to become something more than a piece of precision machinery, something more than a handsome piece of furniture. Radio has become an intimate member of our family.

We should know more about it. That is the purpose of this booklet.

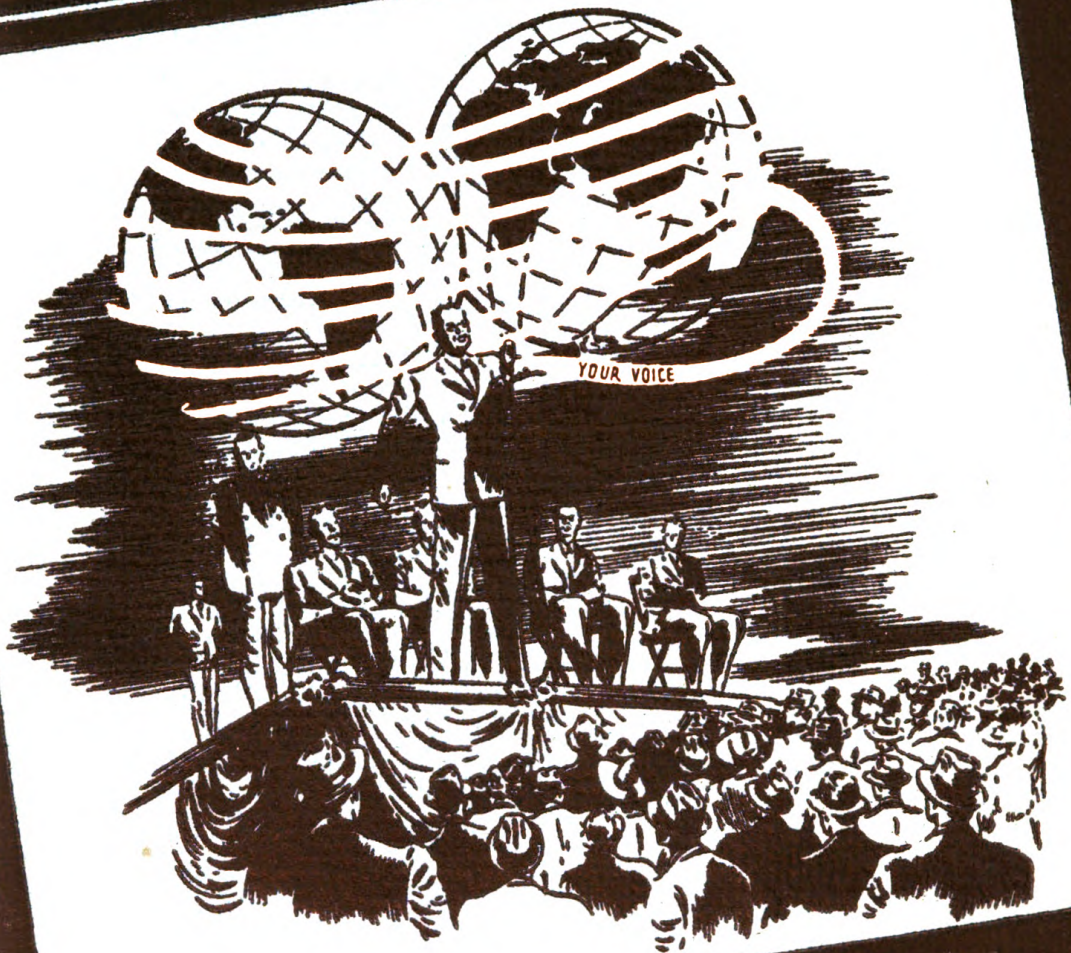


President

National Association of Broadcasters

WASHINGTON, D. C.

WITH THE SPEED OF



RADIO TRAVELS WITH THE SPEED OF
LIGHT . . . ONE HUNDRED AND EIGHTY
SIX THOUSAND MILES *Per Second!*

LIGHT

MOUNT THE PLATFORM and speak to the assembled multitude. Before the person in the last row hears the sound of your voice, radio will have carried your words 'round the world seven and one-half times!

STRIKE UP THE BAND—even though you are listening in your home six hundred miles away, *you* will hear the music one-half second *before* it is heard by the spectator listening just six hundred feet from the bandstand!

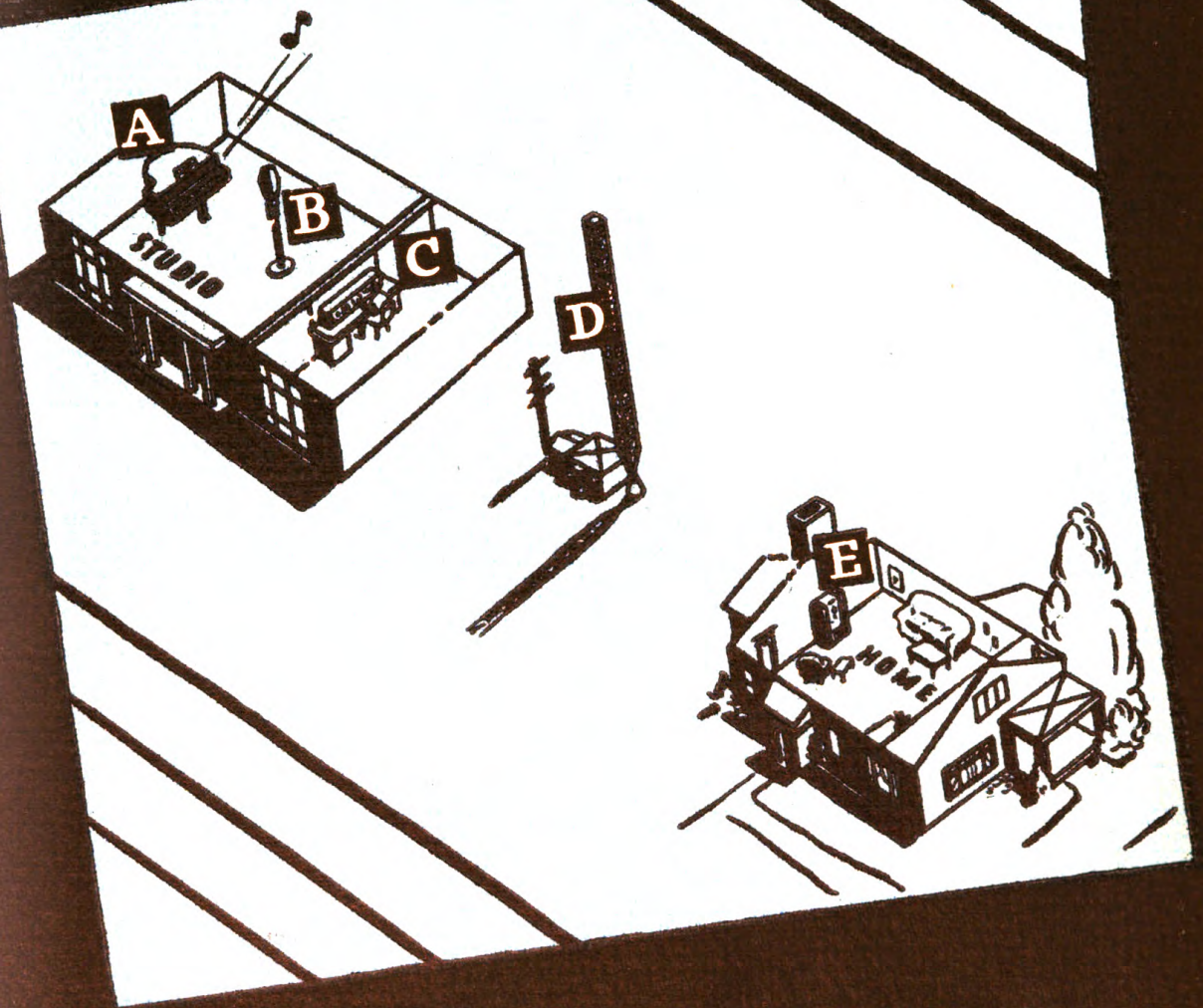
For radio travels with the speed of light, one hundred and eighty-six thousand miles *per second*!

Sound waves, however, like the sound produced by your voice, travel at a much slower rate, barely more than one thousand feet per second.

“How, then, do you *combine* the sound wave with the radio wave,” you naturally ask, “to bring me a radio talk?”

It is in this the Beginning of Radio . . .

STRIKE A NOTE ON THE



*A-Piano...B-Microphone...C-Control Room
D-Radio Antenna ... E-Your Radio ...
≡≡≡ Sound Waves...≡≡≡ Electric Waves*

PIANO

RING the bell.

Blow the whistle.

Strike a note on the piano key-board.

You produce sound.

What is the nature of sound?

Strike the note middle C on the piano.

The note middle C—that tightly strung piece of wire in the piano—vibrates back and forth 256 times per second.

You have generated a sound wave, by setting *air* in motion at this frequency.

You do this when you open your mouth and speak; when you draw a bow across a violin.

Each sound wave has its own *frequency*; that is the number of vibrations set in motion per second.

This is why the piano tuner painstakingly strikes each note on the piano key-board; to know that middle C, when struck, produces exactly 256 vibrations per second; that all the other notes produce exactly their required number of vibrations.

When this is done, the piano is “in tune.” Evidence that *every note, every sound, has its own frequency.*

These air vibrations or sound waves must be converted into electrical impulses. This function is performed by the microphone.

This is what makes possible the translation of sound waves into radio waves . . .



THAT "THING" THE MICROPHONE

EVERYONE has seen a microphone, that "thing" in the studio into which the singer sings and the speaker speaks.

It works something like the mouth-piece of your telephone.

It vibrates when sound waves are set up before it.

Strike middle C' again, and the microphone will vibrate 256 times too.

This is because its face is so thin and sensitive that it responds to sound waves.

But more than this—

Behind this sensitive surface flows electric current—alternating electric current—back and forth.

As the microphone *responds* to the *frequency* of 256 vibrations per second, *so does the electric current!*

And that current, conveyed by wires, goes out to the radio station's *transmitter*, whence it is "put on the air," released through space and received by your radio in your own home.

In other words, the microphone responds to sound waves set up in the studio by voice or music or otherwise, and *converts* them into *electrical frequencies in exact accordance with the frequencies set up by the sound waves.*

Because *each sound* has its own *number of vibrations*, we are able to translate sound waves into electrical waves, and, conversely, to translate electrical waves back into sound waves.

The latter takes place when we tune in our radio at home.

WE TUNE IN



256 VIBRATIONS per second from middle C have been set in motion as the pianist strikes the note.

The microphone vibrates 256 times accordingly.

In turn, these 256 vibrations from a *sound* wave are translated into electrical energy of 256 vibrations per second also!

These 256 vibrations of electrical energy will not travel well through space but must be conducted by wires to the radio transmitter. Here a carrier wave is generated, the frequency of which corresponds exactly with the spot on the broadcast dial assigned to the station by the Federal Communications Commission.

The 256 vibrations are “modulated” on the carrier wave.

We tune in.

Down from the antenna comes the carrier wave with the 256 vibrations on it. The radio receiver amplifies it, picks off the 256 vibrations from the carrier wave.

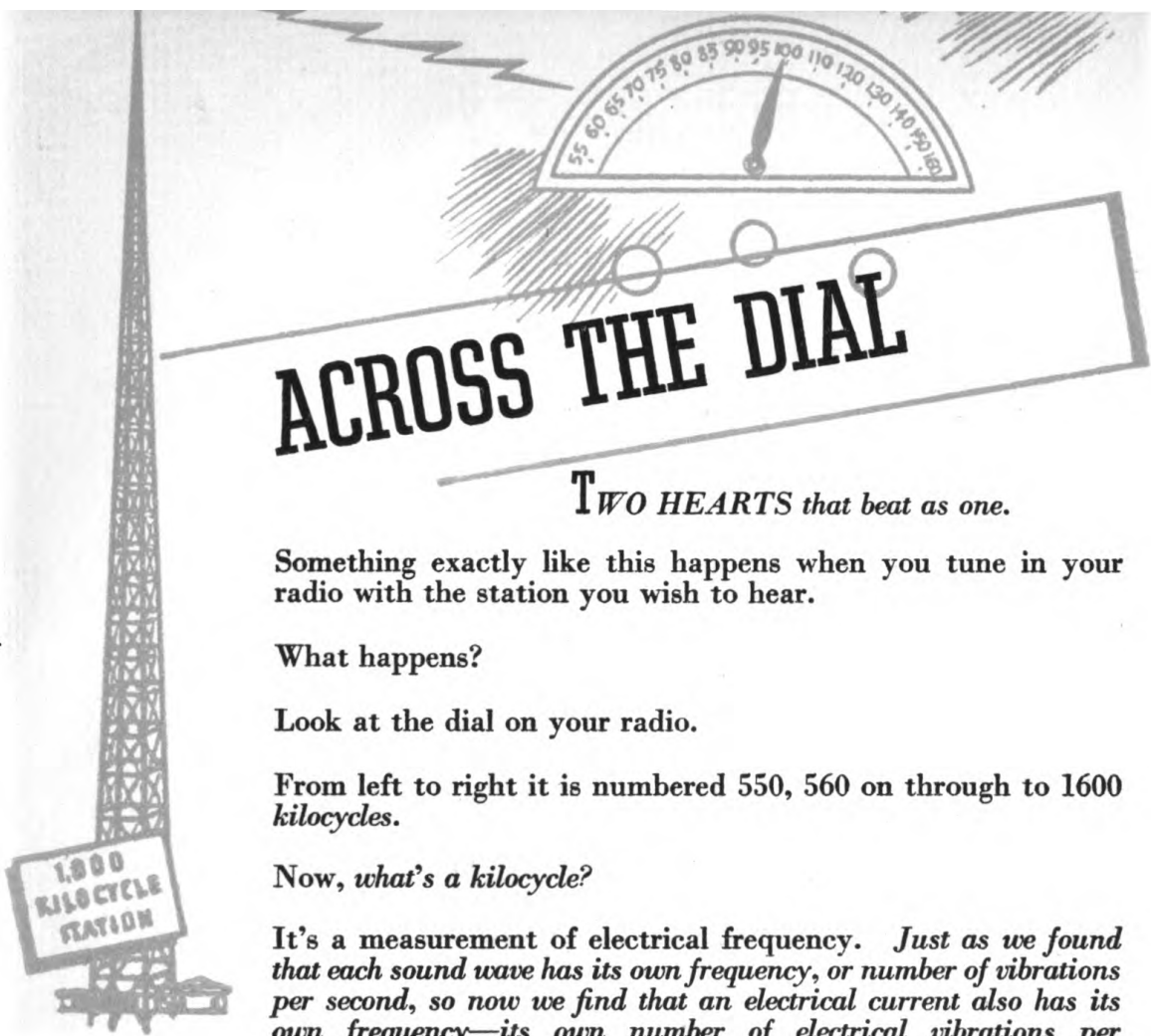
The electrical current of 256 vibrations flows through the loud speaker, which converts it into sound of 256 vibrations by moving the air in the room at this frequency.

Our radio set has translated *electrical* frequencies *back into sound* frequencies.

We are hearing the same note at practically the same time it was struck on the piano in the studio, though miles away. For, as at the *sending end*, the microphone translates all sound into electrical energy to convey it through the air, so at the *receiving end*, the loudspeaker in our own radio translates electrical waves *back again into sound waves* so that the human ear can hear.

This is radio.

If each note struck did not have its *exact* number of vibrations, such would not be possible.



TWO HEARTS *that beat as one.*

Something exactly like this happens when you tune in your radio with the station you wish to hear.

What happens?

Look at the dial on your radio.

From left to right it is numbered 550, 560 on through to 1600 kilocycles.

Now, *what's a kilocycle?*

It's a measurement of electrical frequency. *Just as we found that each sound wave has its own frequency, or number of vibrations per second, so now we find that an electrical current also has its own frequency—its own number of electrical vibrations per second, too.*

Kilo means 1,000; a kilocycle, of course, means 1,000 electrical cycles per second.

Thus if you want to hear a radio station broadcasting at, say, 1,000 kilocycles, you simply turn your dial to the 1,000 kilocycle mark. (Most set dials leave off the zero for convenience. 1,000 kilocycles would be found at 100 on the dial.)

Then you are *tuned in*. *Then, two hearts beat as one.*

For you have made the radio set respond at the *same frequency* at which the radio transmitter is vibrating and at no other frequency, as it releases the radio waves through the air: 1,000 kilocycles.

This is why it is possible for you to tune in, to tune from one station to another over the dial.

For *each station* broadcasts on its *assigned frequency*.

Each station has its own pathway through the air.



PATHWAYS OF THE AIR

UNLIKE pathways on the earth's surface, pathways of the air are exactly laid out in accordance with a fixed scientific pattern.

No detours here.

No new highways may be constructed, nor old ones abandoned.

For radio waves travel to our homes over pathways which have existed since the beginning of time: pathways which stop at no international boundary: which penetrate through the earth, and leap through space itself to reach us.

And so man, to use these swift pathways of the air, has had to accommodate himself to the *fixed geography of radio*.

And next, through international agreement, he has had to parcel out to the nations of the world a fair proportion of radio pathways so that all the peoples of the world could be served. Thus in the United States we find the span of the dial on our radio limited from 550 to 1600 kilocycles.

This is called the *broadcasting band*.

Stations must be separated by a minimum of 10 kilocycles.

If you take the trouble to count, you'll find on the dial that there are 106¹ channels in this band.

Between these limits we are able to tune in the 714 stations broadcasting within the United States.

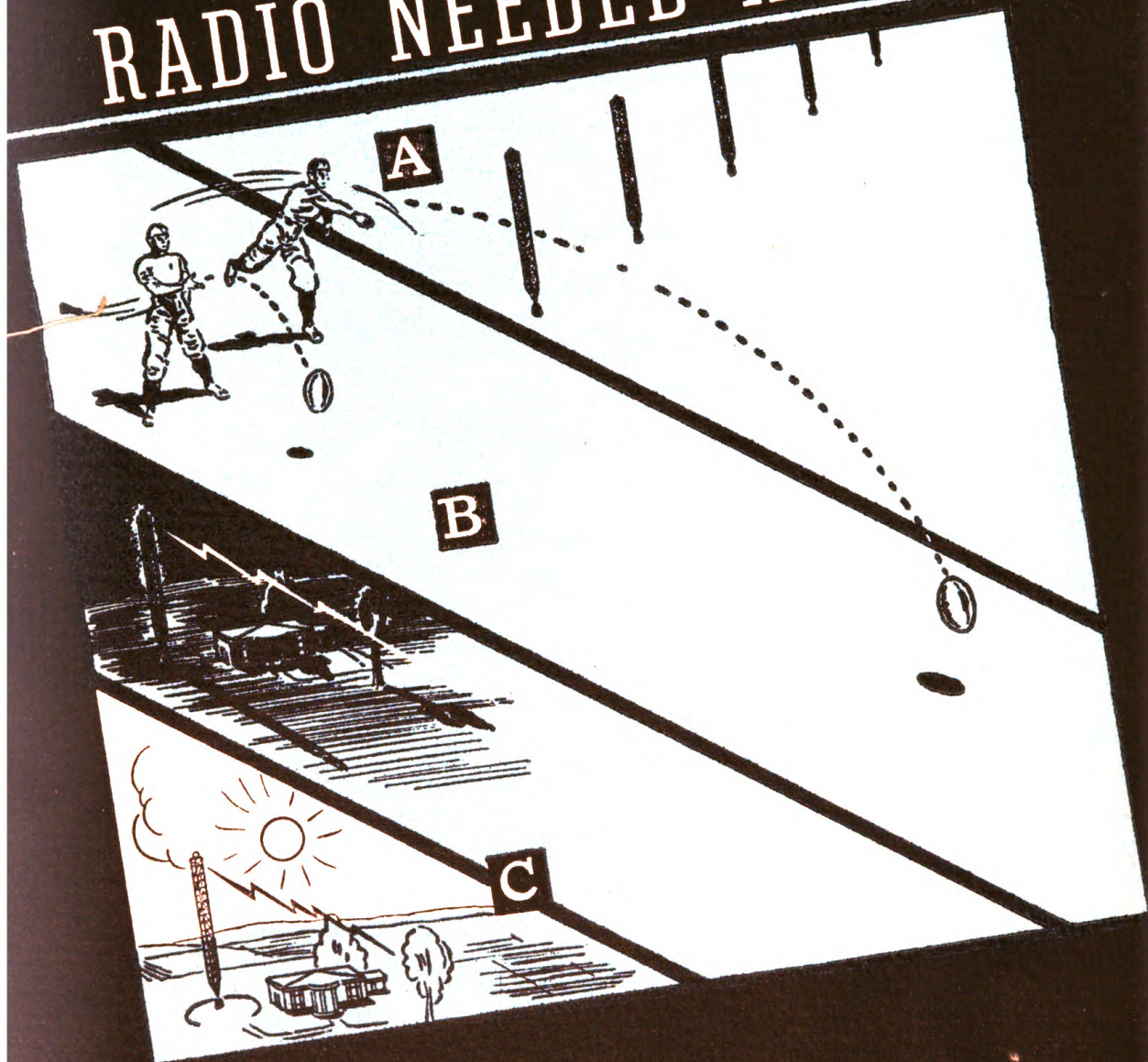
But the phenomenal thing here is the fact that these 714 stations are actually sending their broadcasts over but 106¹ radio pathways!

It is not possible for all 714 stations to reach everybody's home without interference.

¹ Six of these are reserved for the exclusive use of Canadian stations.

This is where regulation enters the picture . . .

RADIO NEEDED A TRAFFIC



COP

714 American stations.

... and just 100 air-lanes ...!

America needed a radio traffic cop!

To tell us *where* to broadcast and *when*!

But how was this new officer of the air to know when to turn his red and green signal?

Fortunately, early explorers in the land of radio brought home some discoveries that simplified the job.

They discovered:

A That each radio frequency must be separated from its neighboring frequency by a margin of ten kilocycles. Without this separation, radio waves tend to overlap and produce a whistling or a booming noise in the ears of the listener. This is called radio interference. This is why your radio dial is calibrated in units of ten kilocycles.

B That just as a football player, in throwing a forward pass forty yards puts more power into his heave than he does when he tosses one but five yards, so must more power be put behind the radio wave to make it cover *different distances beyond the transmitter*.

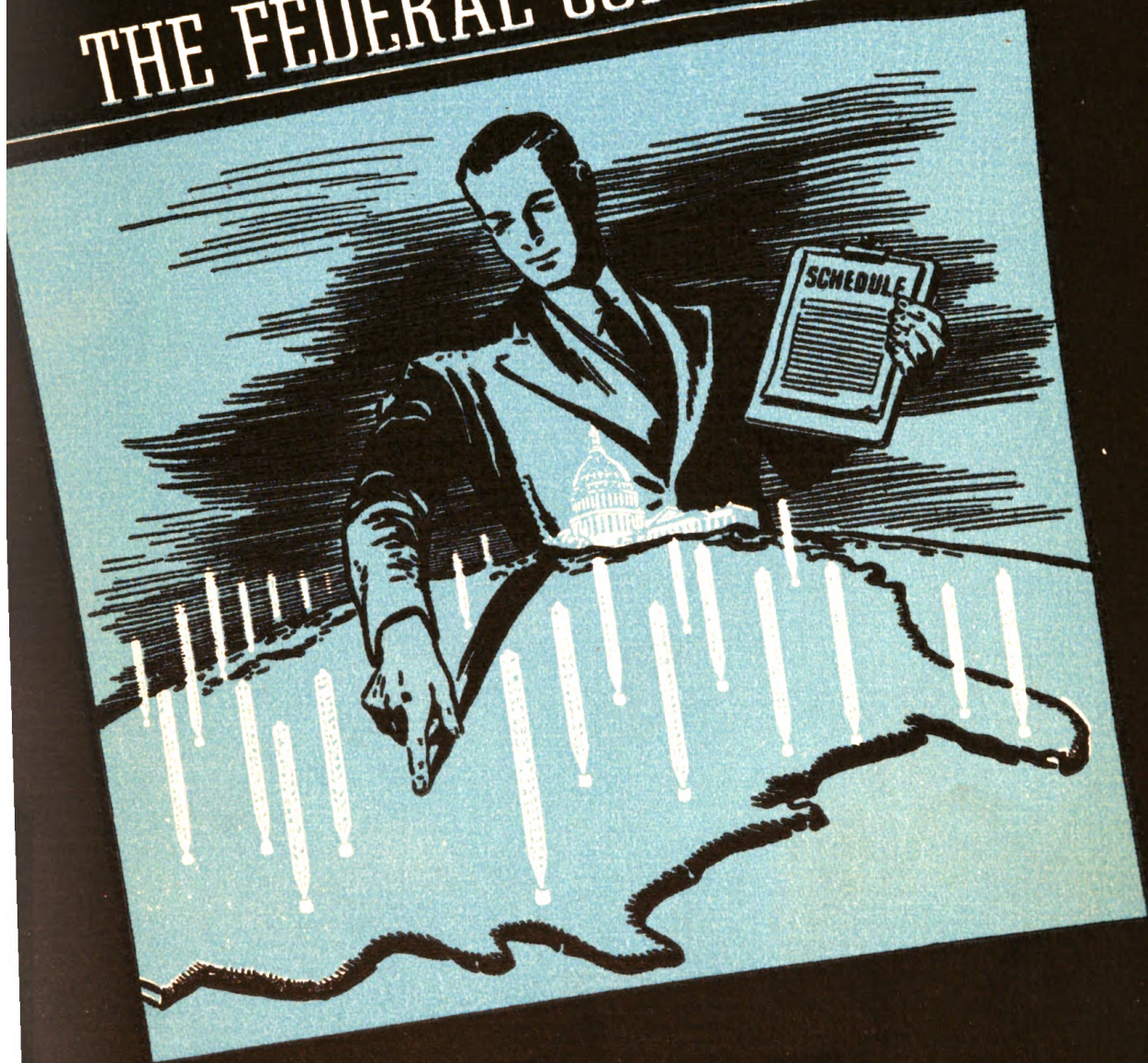
C That radio waves travel farther at night than they do in daytime. Rays of the sun affect them.

Now the radio traffic cop had something to work on.

For through the use of these radio discoveries, he was now able to guide the 714 radio stations along the 100 American radio highways without danger of head-on collisions and side-swiping interference.

For just such a purpose, Congress created the first Federal Radio Commission in 1927. In 1934 this was supplanted by the Federal Communications Commission, America's radio traffic cop!

THE FEDERAL COMMUNICATIONS



**ANY AMERICAN LISTENER KNOWS THE
EXACT LOCATION ON THE DIAL OF HIS
FAVORITE RADIO STATION . . .**

COMMISSION

THE Federal Communications Commission tells each station over which pathway it may send its program to your home.

It requires that each station owner be an American citizen; that he furnish satisfactory evidence as to his moral and financial responsibility to operate "in the public interest, convenience and necessity."

It requires that high technical standards be kept. It specifies the number of hours per day the station may operate and with what power.

As a result, any American listener knows the exact location on the dial of his favorite radio station. He knows that every time he tunes in to a certain station he can always locate it at the *same place* on his dial.

THINGS WERE NOT ALWAYS SO ORDERLY ON THE AMERICAN AIRLANES!

Not so long ago, anybody in the United States who so wished could start a radio station!

He could select any frequency he desired and begin broadcasting! There was then no traffic cop of the air to tell him to move over to another radio traffic lane; or to get off a one-way radio street. It made little difference whether somebody was already broadcasting on the frequency he chose, or not. He could do as he pleased. The courts ruled that he could!

This was in 1926. At that time, Herbert Hoover was Secretary of Commerce. He had been endeavoring to bring about some orderly use of the broadcast band.

Then someone challenged his authority, and the courts ruled that the Department of Commerce—in fact, that no department of the Government—had any jurisdiction over radio! Anybody could broadcast anywhere, anytime.

The result brought on utter chaos and pointed out *the fundamental need of radio regulation.*

The air mushroomed with new stations who had passed no examination as to their fitness to operate a radio station—technical, moral, financial, or otherwise. Head-on collisions of sound waves shook the ether, and ear-splitting sounds crackled from radio sets all over the nation. There was nothing to hear but noise and finally the noise reached the ears of Congress.

The first Radio Act of 1927 resulted. It laid an orderly pathway for radio in the United States and gave us what has been called the American System of Broadcasting.



RADIO PATHWAYS IN THE UNITED STATES

ACTING on the principle that every American citizen has the right to receive good radio service, the government authorities have allocated the 100 channels to 714 radio stations.

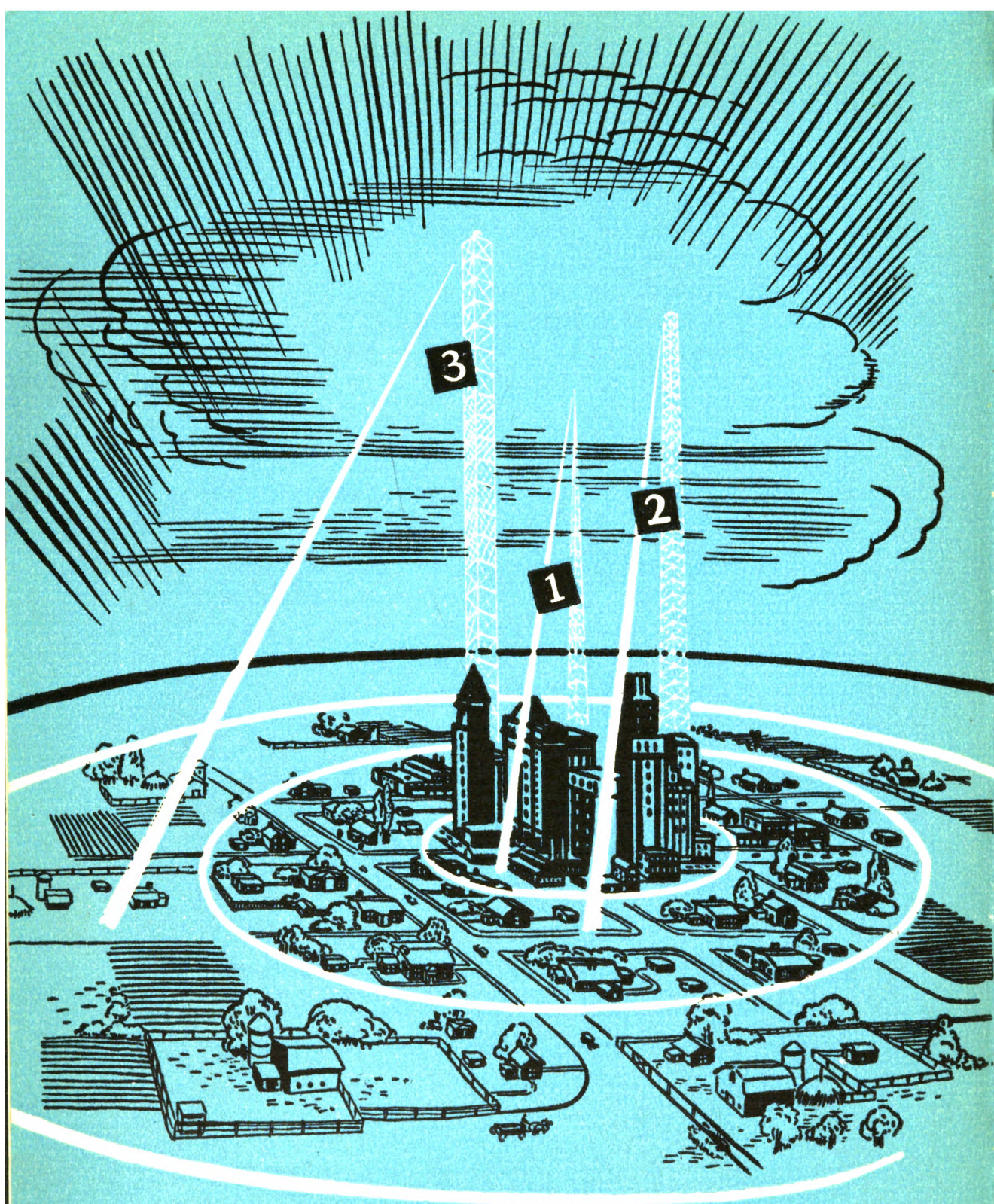
They have endeavored to do this on the basis of population and through the use of discovered radio laws.

By limiting the power of some, they have found that two or more stations, located far enough apart, could broadcast on the same frequency without interfering with each other in their immediate vicinity.

They have found that inasmuch as radio waves travel farther at night than they do in the daytime, this deficiency could be overcome by permitting *more stations* to broadcast from *sunrise to sunset* than are permitted *after sunset*.

They found that by raising the power of others, greater distances could be covered to bring the radio signal within listening range of wide regions and remote rural America.

From these facts they have granted licenses on the basis of three general classifications of stations:



1. LOCAL STATION
2. REGIONAL STATION
3. CLEAR CHANNEL STATION

1. LOCAL STATIONS:

To serve the city in which they are located and the immediate surrounding territory (for example, one or more counties). Of limited power, two or more stations may broadcast on the *same* frequency without interference if their transmitters are located not less than about 150 miles apart. Thus several local stations, at *different locations* across the country, may all broadcast on the *same frequency*. But when *you* tune in, *you hear only your local station*.

2. REGIONAL STATIONS:

As the name implies, these stations serve a wider geographical region than served by the local station. (For example, the middle section of a state). They are given more power to reach out and do the job. Also the mileage separation between stations is greater to reduce interference.

3. CLEAR CHANNEL STATIONS:

To reach those people on the farm or in small towns, not reached by the local or regional stations, 26 channels have been set aside as "clear channels." (No other station may broadcast on these channels.) These have been granted greater power necessary to project their signal over greater distances.

No station is permitted to change its location on the dial without the authority of the Federal Communications Commission.

Thus, through regulation, order has been restored to the American Radio Pathways.

Each kind of station gives a program service calculated to be of interest to the kind of people it serves. For example, a local station in a metropolitan area gives a different kind of radio program than a regional or clear channel station having a wide following of listeners in small towns and on the farm.

But this is a story unto itself, one that goes to the roots of the American System of Broadcasting.

ROOTS OF THE AMERICAN SYSTEM OF



... FREEDOM OF RELIGION, FREEDOM OF
THE PRESS, FREEDOM OF SPEECH

BROADCASTING

IN THE United States, Congress gives every authority to the Federal Communications Commission needed for the orderly technical regulation of radio frequencies; it gives it *no* authority to control what can or cannot be said over the air. (Other than the necessary restraint that no one may utter profane, obscene, or indecent language over the radio.)

The Commission has been given no right to deny freedom of speech in radio. Candidates of recognized political parties must be granted *equal* facilities of expression by every radio station.

Thus, the American System of Broadcasting is based upon the same democratic ideals which guarantee us freedom of the press, freedom of religion, freedom of speech.

Writing on the subject "Radio by the American Plan,"¹ former United States Senator Clarence C. Dill, and co-author of the Radio Act of 1927, declared:

"The legislative problems which radio presents in the United States are widely different from and more difficult than those of other countries. In nearly all other countries, the government directly or indirectly manages and controls radio stations and levies taxes or fees to provide for their operation. In the United States, Congress has refused to do either."

Though Congress provides that licenses may be granted for a three year period, the Commission has consistently issued them but for a six months' period.

This means that every six months, representatives of a radio station must submit ample evidence in Washington that its program service has been "in the public interest, convenience and necessity."

¹ From "Radio And Its Future,"
edited by Martin Codel.

Of this the Federal Council of the Churches of Christ in America, in its recent review of radio "Broadcasting and the Public"¹ had this to say:

"At this point, however, an acute problem arises. Control in any degree over the quality of programs, through authority to give or withhold a license, is a power to be used cautiously and to be vested in a federal commission only under the strictest safeguards. The American people have never been willing to let the government have control of the cultural activities of the nation. We have, for instance, kept education as free as possible from all interference by the national government. Nothing is more important than that broadcasting should be kept free from political domination. . . .

" . . . In a democracy freedom of speech is a priceless possession. No administrative government agency is wise enough to be entrusted with what people shall hear. Freedom of radio is almost if not as important as freedom of the press. If either is curtailed, our political and religious liberties are imperiled.

"For this reason, we believe any attempt to regulate utterances over the radio by an administrative government agency, except within canons of decency, propriety and public safety, clearly defined by statute, is dangerous and contrary to public policy. Any threat of non-renewal of a license on the basis of programs not yet broadcast, we would regard as a form of censorship."

¹Published by the Abingdon Press, New York, and released October 1938.

THE *ABC's* OF THE AMERICAN SYSTEM OF BROADCASTING

American radio is free.

It is free to bring us swing or symphony; a church service or a comedian—whatever it is we want to hear.

No censor tells us what we *shall* hear and what we *shall not* hear.

It is free to bring us the news of the day as it happens; it is free to bring us both sides of public questions, free to present candidates for public office, the “outs” as well as the “ins.”

It gives us both the *right to listen* and the *right to be heard!*

It is free to be responsive to our wishes in matters of religion, education, music, drama, news, sports, entertainment.

In America we are our own radio censors!



No one can *compel us* to listen; no one can *prevent us* from dialing off.

Through the orderly assignment of American radio stations across the dial, *we are free to tune from station to station to hear the programs we prefer!*

Through the competition between stations, established under the American System of Broadcasting, each station is *forced to compete for our favor.*

If the station does not please us, it loses listeners!

If it loses listeners, it loses the economic support necessary to operate.

As a result, Americans are getting the finest radio program service, unmatched anywhere in the world.....

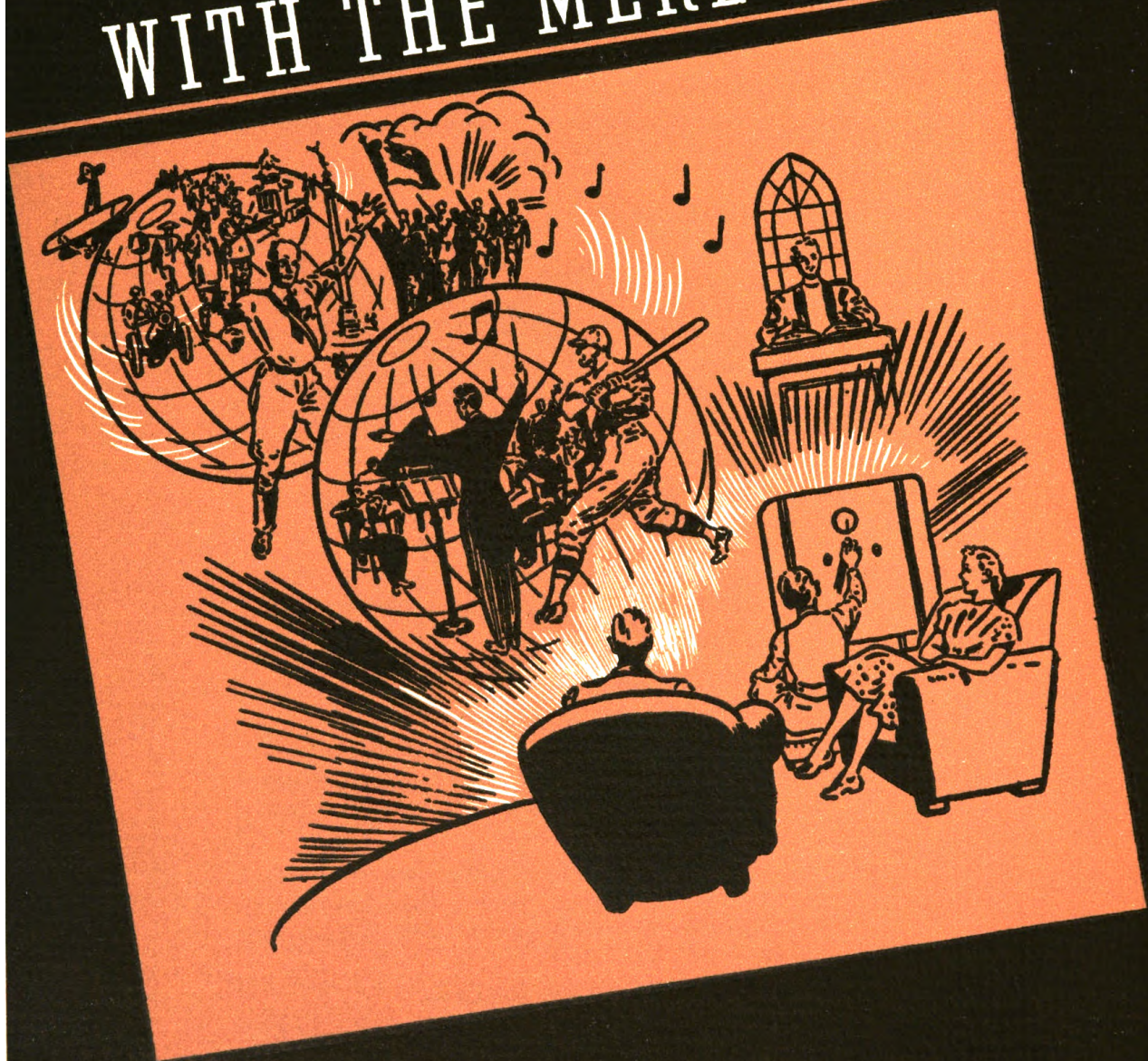
.....without cost.....

.....without tax.....

.....without censorship.....

..... *With the mere twist of a dial*

WITH THE MERE TWIST OF



WITH THE MERE TWIST OF THE DIAL
WE ARE SEATED IN THE FRONT ROW
OF THE WORLD'S THEATRE . . .

THE DIAL

WITH the mere twist of the dial we are swept five thousand miles across the sea to hear war declared or delayed; to hear a king abdicate and an emperor crowned.

With the mere twist of the dial we are taken to church, to the classroom, to the feet of some great man as he speaks his thoughts.

With the mere twist of the dial we are seated in the front row of the world's theater: music, variety, drama, all are ours to hear.

These are ours, plus the news of the day as it happens, through the radio in our living room.

Who pays the bills for these things?

The government cannot, for that would mean taxation or assessment.

And taxation or assessment leads to government domination and control of what we hear or do not hear by radio. (This is the European system of radio. This the American people have clearly indicated they will not tolerate.)

These programs, these services, are expensive.

And giant tubes, and steel radio towers that stretch high into the air, and studio plants and microphones are heavy investments not to be made lightly.

But broadcasting pioneers there were!

Some were attracted by the sheer novelty of the thing. Others realized there was no good reason for a man to buy a radio set unless there was something on the air worth hearing. Give a man reason to own a radio and this then-little-gadget would lead America into a new industrial development.

WITH THE MERE

So the first broadcasting began.

The first sets were bought and the first listeners listened, happy as we were then to hear the faintest trace of a sound.

But early manufacturers, with more courage than cash, soon found that they could not much longer carry the financial burden of paying for radio programs in order to create a demand for their radio sets.



(Nor could the automobile manufacturer hope to survive if he had to pay the bill for new roads, just to create a demand for his automobile.)

And there were others whose curiosity about the novelty soon was appeased when the bills came in.

It was soon found that broadcasting must have its own economic foundation if it was to develop and render service that would win public support,

if, in fact, a fine American radio was to take its place alongside a fine American press.

And American radio found the answer to the problem of economic support in the same place where the American press found it: from the advertiser.

And for the same reason: *radio, like the newspaper, had an economic function, too.*

For as good newspapers attract readers so good radio programs would attract listeners.

Readers and listeners are we people in the American family: father and mother; son and daughter.

TWIST OF THE DIAL



Every day we need things: a pair of socks or a new dress; a car wash or a permanent wave; new tires or new shoes.

Every day we go out and buy things.

Advertisers want us to go out and buy their things.

It is more economical and sensible for them to take space in a newspaper and reach a hundred thousand people, than it would be to send a salesman around to make a hundred thousand personal calls.¹

So it is with radio.

And so here was the source of revenue that would enable radio to pay its own way; to grow and expand as new discoveries demanded; to develop new program services; to win the confidence and approval of the listening public for the American System of Broadcasting.

Here at last was the means.

But broadcasters had one more problem to solve, and that problem was the key to the whole future of radio: *Could American broadcasters make people want to listen? If they could, a new industry would be born; a mighty, new social force for America would result.*

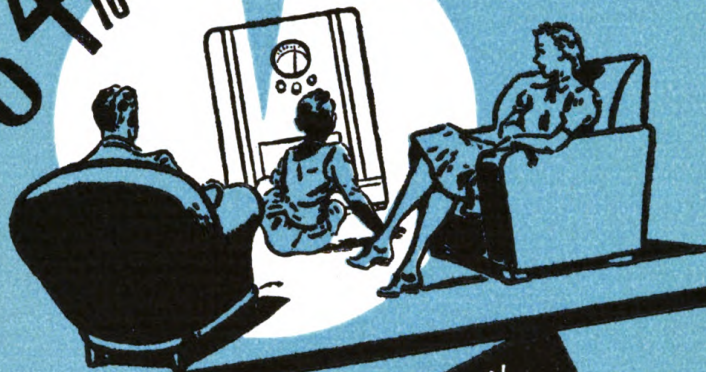
¹ Advertising is as much a part of our American life as is Henry Ford's mass production method.

As advertising creates demand for more needed products, more products have to be made.

As more products are manufactured, the unit cost of each item manufactured is reduced, more people are employed, more value is built-in. This is why an automobile today is not only superior to one made twenty years ago, but why it costs less. The same is true of your radio set, and so on through the list.

DOES AMERICA WANT TO

84%



TWENTY
SEVEN
MILLION



THIRTY
THREE
MILLION

27 MILLION VOTES OF CONFIDENCE IN
THE AMERICAN BROADCASTER'S ABILITY
TO SERVE AND TO PLEASE . . .

LISTEN?

WHAT is the value of a radio set?

Great streams of scientific research have been poured into its making. The finest skilled workmanship of American labor has been employed to produce it.

It is the new and handsome piece of furniture without which no American home is complete.

But the *ultimate* value of a radio set depends upon its ability to receive radio programs that people want to hear!

When the head of an American family buys a radio set, he is taking a chance that the broadcasters will bring him and his family the sort of radio program they want to hear.

When he buys a radio set he is actually casting a vote of confidence to the American System of Broadcasting!

He wants to listen.

How many American families *want to listen?*

Eighty-four per cent of American families own a radio set!
Twenty-seven million families own *thirty-three million* radio sets!¹

Twenty-seven million votes of confidence in the American
Broadcaster's ability to serve and to please.

Of the total number of radios in the world, more than half are in use in the United States.

And more than this: when the head of the American family buys a radio he is giving employment to some 345,000 Americans who in turn support nearly a million and a half people.

¹ Joint Committee on Radio Research.

Most recent trade figures¹ show that direct employment in radio totals 345,000 men and women in the United States. Of this number 91,000 work in about 500 factories making radio sets, tubes and parts. About 25,000 are connected with wholesale establishments handling radio merchandise. Another 56,000 are engaged as radio retail merchants, while salesmen, repairmen and others engaged in radio sales and service total 150,000.

To these must be added 23,000 people regularly on the payrolls of broadcasting stations and networks. And to these also must be added the great number of musicians, actors, actresses and other radio artists who are employed on programs on a contract basis.

These figures do not take into account employment that radio creates for copper miners, refiners, metal workers, and lumbermen, or the electrical supply industry which benefits from radio. Nor have we counted the thousands who work in businesses which have been largely created or stimulated by radio.

All these men and women at work; all these millions of sets in American homes, because American broadcasters proved they could make people *want to listen!*

¹ From figures compiled by McGraw-Hill Publishing Company, Inc.

WHAT WE WANT TO HEAR

EACH of us has a favorite radio program and a favorite personality.

They're radio to us.

So has the next fellow.

Not everything in a magazine or a newspaper will interest us.

The same is true of radio.

Certain stories for certain tastes; some stories for all the family; some for just the children; others for just the parents.

The same is true of radio.

What more of us want, more of us get.

What the rest of us want, we get, only in less quantity than what the majority receives.

American radio reflects the tastes and wants of America.

And what are our tastes and wants?

During the week of March 6, 1938, The Federal Communications Commission made an interesting study of all programs broadcast by all American radio stations.

It undertook to determine what sort of programs we were listening to; it wanted to find out how many of them were sponsored advertising programs, and how many of them were non-sponsored programs.

This is what they found during that week:

**64.45% OF ALL BROADCASTING
WAS SUSTAINING**

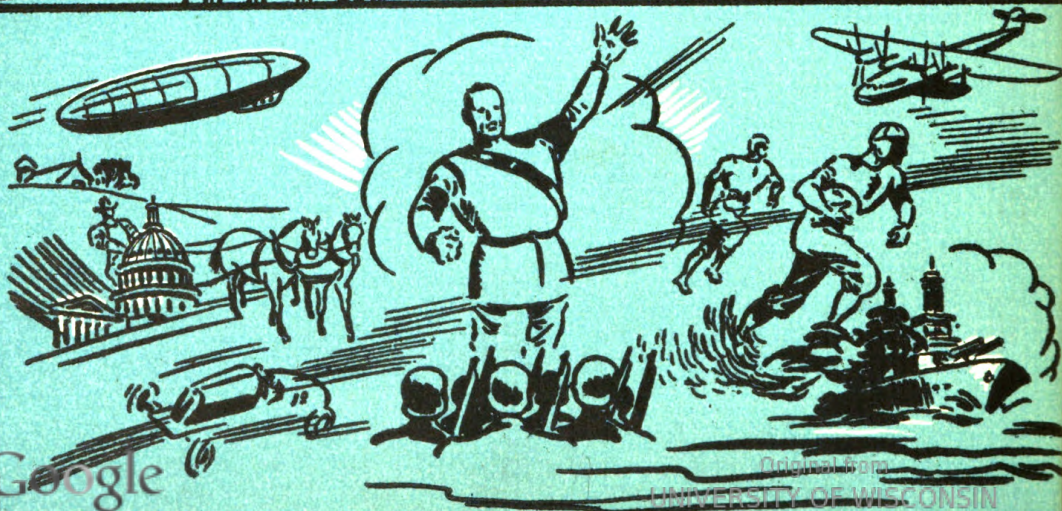
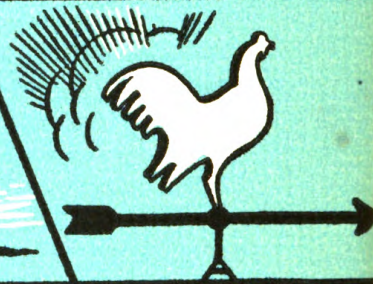


34.55% WAS SPONSORED



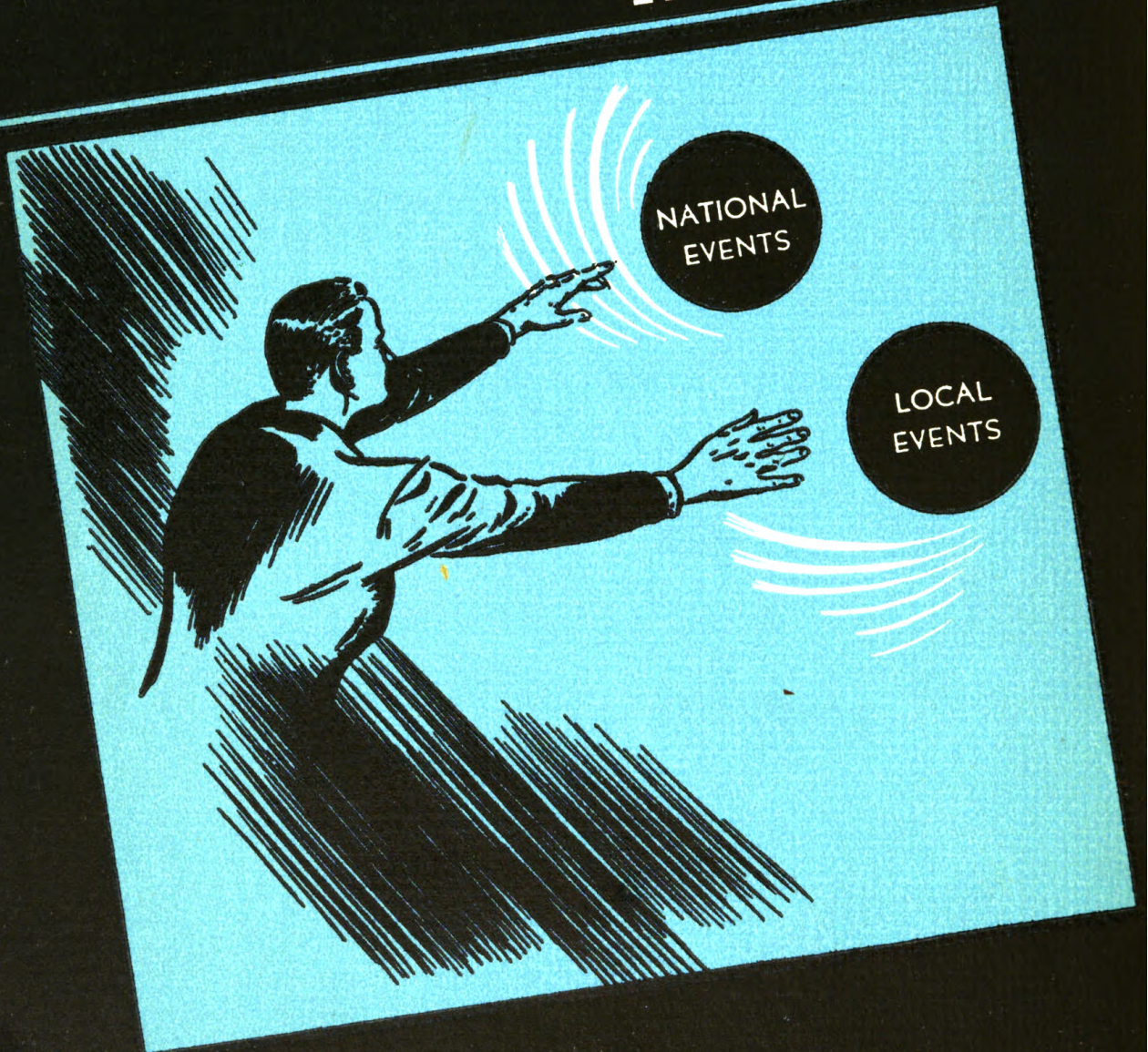
In other words through income derived for use of 34.55 per cent of the time, American broadcasters were able to give us full radio service through 100 per cent of the radio schedule.

And this is what we wanted to listen to, according to the survey released by the F. C. C.



TYPE OF PROGRAM	PER CENT OF TOTAL TIME
I. Music	
Serious.....	6.48
Light.....	9.95
Popular.....	32.27
Other.....	3.75
Total I.....	52.45
II. Dramatic	
General Drama.....	6.50
Comedy Scripts.....	.98
Children's Drama.....	1.63
Total II.....	9.11
III. Variety	8.84
IV. Talks and Dialogues	
Social and Economic.....	2.33
Literature, History, and General Cultural.....	2.34
Household and Others of Special Interest to Women.....	2.68
Farm Management and Others of Special Interest to Farmers.....	1.67
Political.....	.31
Others.....	2.08
Total IV.....	11.41
V. News	
News Reports.....	6.56
Sport Flashes.....	.96
Market, Crop and Weather Reports.....	1.03
Total V.....	8.55
VI. Religious and Devotional	5.15
VII. Special Events	
Meetings and Occasions of Civic Interest.....	.77
Sports.....	1.21
Other.....	.23
Total VII.....	2.21
VIII. Miscellaneous	2.28
IX. Grand Total	100.00

NETWORK



AS TIME MOVED ON WE WANTED
STILL MORE . . .

BROADCASTING

ONCE it was enough that the cat's-whisker-gadget we called a radio brought us just a sound—*any* sound. After a while we became more discriminating. We wanted to hear the local jazz band—our church choir—and His Honor's, the Mayor's voice.

As time moved on we wanted still more. We wanted to hear the voice of the President of the United States—we wanted the opera, the famous symphony—the top-flight dance bands of the nation.

We wanted to hear the World's Series, the Heavyweight Fight, Labor Day speeches, the opening of Congress. We wanted to hear *things* and *people* far removed from our local communities.

Thus grew the demand for network broadcasting. We wanted things national, and we wanted things local, too.

Now, what's a network?

How does it work?

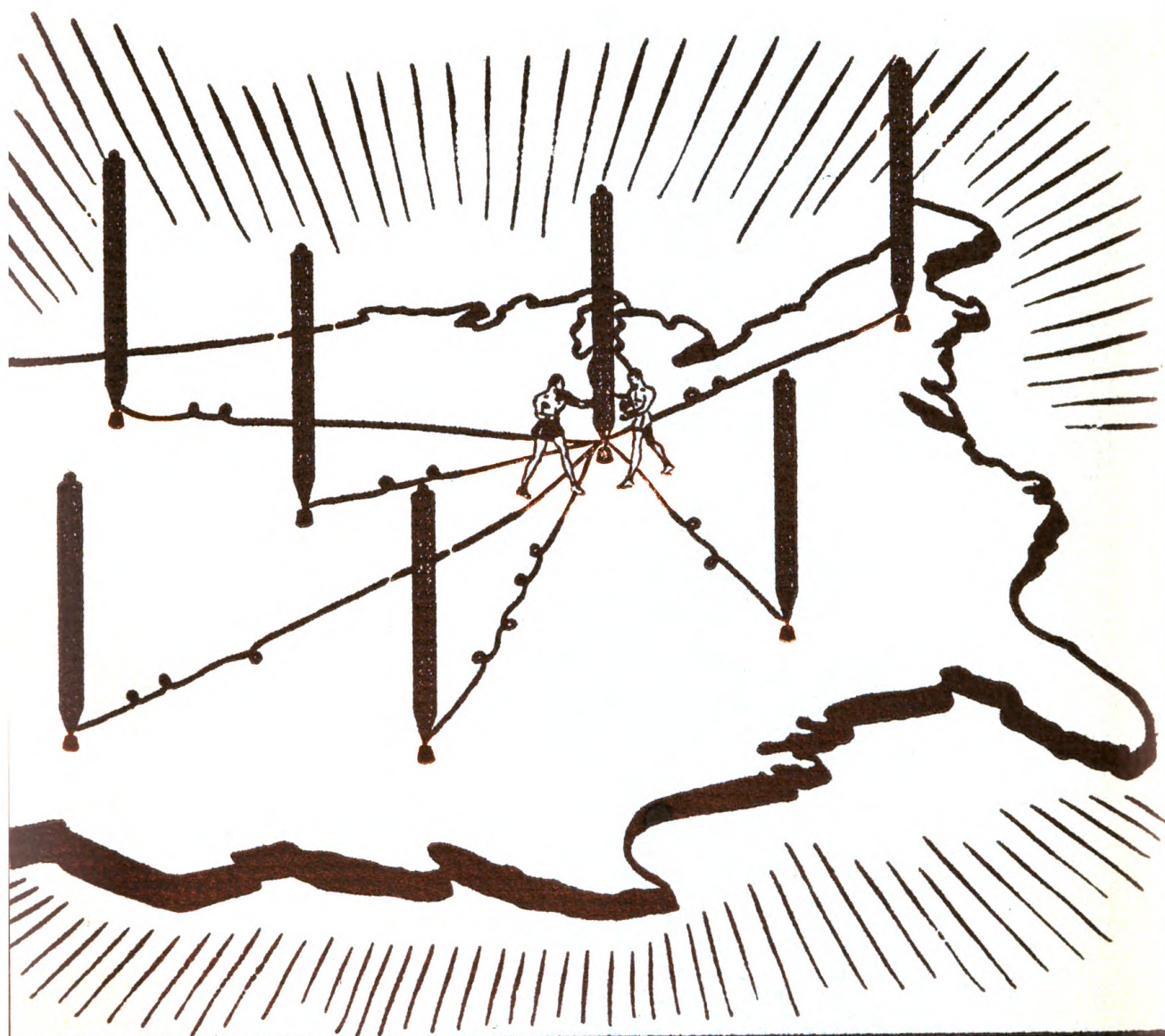
The National Broadcasting Company owns outright but 10 stations; it leases 8 more; but the NBC Network (Red and Blue combined) consists of 161 associated stations.

The Columbia Broadcasting System owns outright but 8 stations; it leases 2, yet the CBS Network consists of 114 associated stations. The Mutual Broadcasting System owns no stations outright. It consists of a total of 108 associated stations.

A network is simply a group of local stations that have become voluntarily associated together for the purpose of bringing local listeners programs of national interest.

NETWORK

Broadcasting



A NETWORK IS SIMPLY A GROUP OF STATIONS
WHO HAVE BECOME ASSOCIATED TOGETHER
FOR THE PURPOSE OF BRINGING LOCAL
LISTENERS PROGRAMS OF NATIONAL INTEREST

It consists of a large number of widely separated stations permanently linked together by specially leased telephone lines, making it possible to pick-up and broadcast from almost any part of the country. In times of national emergency or of great national interest in a political, social, religious, or special event, network service is of vital importance.

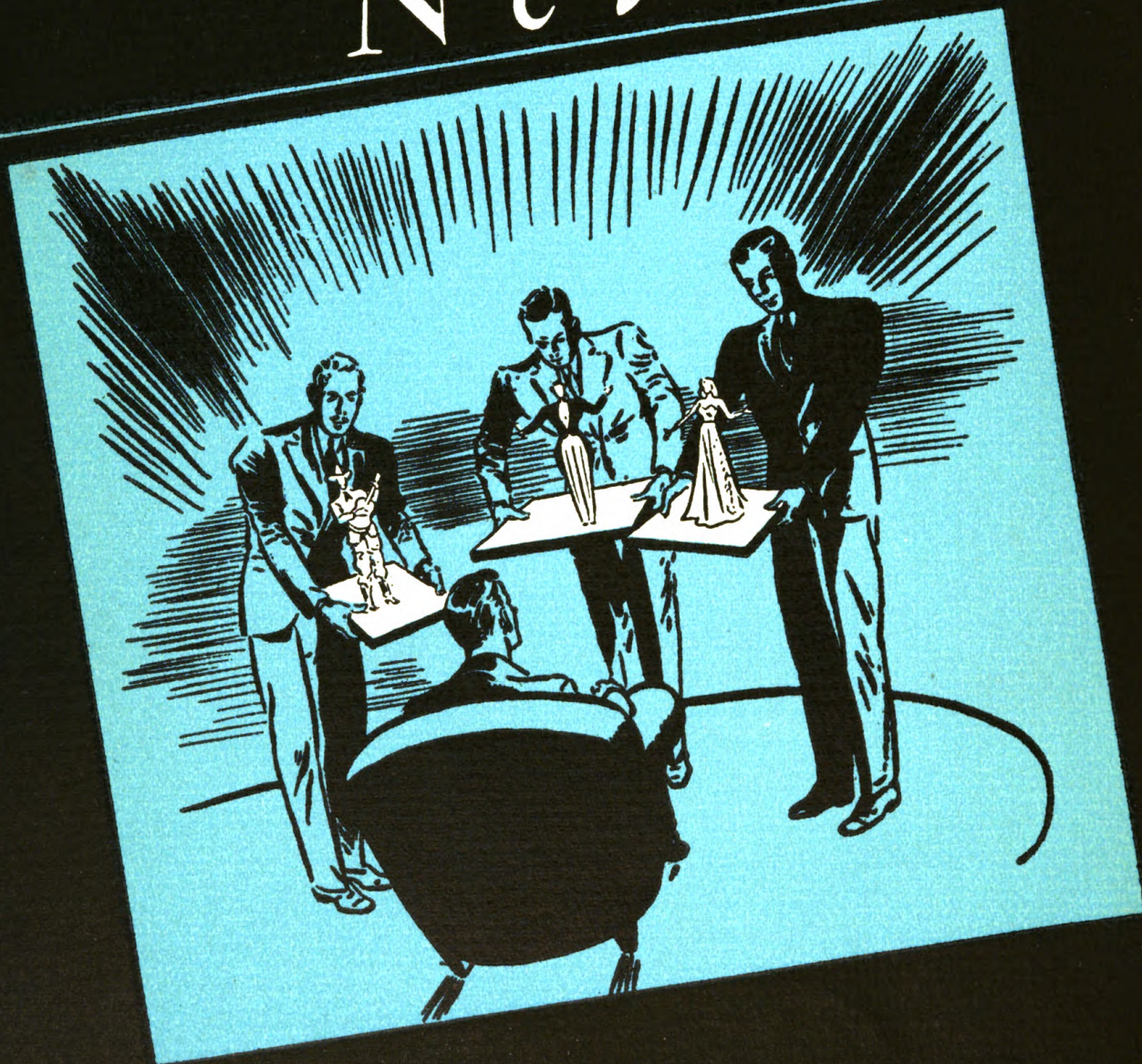
Its income is derived from the sale of time and talent to national advertisers who invest large sums of money in programs calculated to interest large groups of listeners.

(Networks and local stations cut-into or cut off any commercial show at any time if events of transcendent public importance have occurred or will occur during the time of the commercially sponsored programs.)

HOW A NETWORK BECOMES A NETWORK

Through the sale of such time, networks are able to pay for *non-revenue-producing network programs* such as coverage of the Hitler-Chamberlain meetings and the European war-scare; special events such as the Hughes Round-the-World-Flight; special services such as Columbia's America's School of the Air, or Mutual's Nation's School of the Air; NBC's National Farm and Home Hour, or political events such as the Democratic or Republican Conventions; musical events such as Mutual's Chicago Symphony Orchestra Broadcasts, NBC's Toscanini Symphony; Columbia's New York Philharmonic. All these programs and the like are paid for through income derived from commercial sponsored shows.

Network



EVERYBODY SEEKS
THE AMERICAN LISTENER'S EAR

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UNIVERSITY OF WISCONSIN

Broadcasting

To bring listeners the country over programs originating in the great talent centers of the nation or the ceremonies or events happening in some one place or city, someone got the idea of connecting many stations together by special telephone wire circuits.

These lines are leased by the broadcasting companies from the telephone company. Because of their very special purpose, highly trained technicians must be stationed at regular posts along the thousands of miles of lines used to "monitor" the lines; to see that no interference, electrical or otherwise, disturbs the program being carried through them and to see that no line-breaks occur which would render a faulty radio service. This is a painstaking and expensive service, but necessary for proper network broadcasting.

To make national network broadcasting possible, your local station affiliates itself with one of the major national networks. *Though locally owned, it thus becomes a "network affiliate."*

It sets aside a certain amount of "time" so that the national networks may secure the uniformity necessary for national clearance.

In the field of public and local service, however, it operates like your local newspaper which may accept or reject "anything coming over the wire" should a community or regional or national situation so demand. This is network broadcasting.

EFFECTS OF NETWORK COMPETITION

In a country where radio, like the press, may not be controlled by the government.

... In a country where three major national networks and 23 regional networks also operate ...

... In a country where competition is truly the life of trade ...
The American listener finds that ... *Everybody seeks his ear!*

One network competes against another to attract listeners.

One advertiser on one network competes against another advertiser on another network for the same purpose.

Newer, fresher and more elaborate radio programs come to our homes as a result.

And should these get "too elaborate," another network, another station, another advertiser, swings the pendulum the other way, as public fancy indicates, and we have a variation—a heart-warming, simple, homespun program.

Let an advertiser, or a station, or a network, get a reputation for doing an outstanding radio job in *any* field, and another advertiser, or another station, or another network is there to challenge him, because under the American System of Broadcasting, stations, networks and advertisers on those stations or networks *are forced to compete for the favorable ear of the public.*

TRANSCRIPTIONS

There is still another way of relaying metropolitan talent and program service to local listeners: through the "transcription."

The transcription is like an ordinary phonograph record, but it is especially created and recorded for radio broadcasting purposes.

The development of transcription libraries in recent years has opened up a new and extremely important source of high quality program material for all radio stations, but especially those stations serving communities in which the number of talented musicians, singers and dramatists is limited or insufficient to meet the demands of daily radio programming. Regular monthly additions to the transcription library of the local station keep its programs fresh and with current appeal.

Thus from *three* fields American listeners draw their radio entertainment and service: from *locally* produced radio productions, from *network* programs via local *affiliates*, and from radio *transcriptions specially adapted to local tastes*.

And with them all, *competition*, as between local show and local show; competition as between network show and network show; competition as between transcription and transcription.

No other system of radio has been so *competitively* devised.

That is why American radio is *live, vibrant, improving—a mirror freely reflecting American tastes, ideals and life*.

This is the American System of Broadcasting.

